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ABSTRACT

Employer-sponsored skill training (ESST) has evolved as employers have sought to achieve organizational goals with existing human resources. Such problems as personnel turnover, technological change, and changes in the composition of the work force have required the provision of additional training for adult workers. Social, economic, political, and technological factors have influenced the development of ESST programs since colonial times. ESST programs today are affected by similar factors. A significant social factor affecting ESST programs today is demography. The median age of the U.S. population is increasing rapidly; as workers remain in the work force longer, they need retraining. Another social factor affecting training is a changing philosophy toward life and work. ESST tends to drop off with the beginning of economic recession and pick up as economic recovery progresses. This trend, however, may change as management begins to view training as a long-term investment rather than as an operational cost. Numerous types and variations of ESST programs exist. All such programs, however, should be characterized by the following elements: (1) top management who value personnel development; (2) trainers who are highly qualified and well-rewarded; (3) an incentive plan for employee self-improvement; (4) well-equipped training facilities; and (5) an adequate instructional resource center. In the future, training programs could be improved by the formation of more linkages between public and private sectors in the joint task of producing more skilled workers. (KC)

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EMPLOYER-SPONSORED SKILL TRAINING

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FOREWORD

Employer-sponsored Skill Training reviews the history of training, describes typical current programs, and discusses future considerations. The effects of social, political, technological, and economic changes in American society are traced through the development of programs and illuminated within the context of present programming. Future considerations drawn from the literature speak to the need for a comprehensive national work-life education policy.

This paper is one of ten interpretive papers produced during the fifth year of the National Center's knowledge transformation program. The review and synthesis in each topic area is intended to communicate knowledge and suggest applications. Papers in the series should be of interest to all vocational educators including teachers, administrators, federal agency personnel, and researchers.

The profession is indebted to Dr. Robert Wenig and Dr. William Wolansky for their scholarship in preparing this paper. Dr. Wenig is associate professor of industrial arts education in the Department of Occupational Education at North Carolina State University. He teaches both undergraduate and graduate classes and advises doctoral students in industrial arts education and occupational education. He has served as an evaluation consultant to government agencies and private industry. Dr. Wolansky is professor and department head in the Department of Industrial Education and Technology at Iowa State Unversity. He teaches graduate seminars and classes in administration and evaluation in vocational education for doctoral students. He has consulted extensively with private industry in hydraulic and pneumatic technologies.

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Robert E. Taylor
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EXECUTIVE SUMMARY

Employer-sponsored skill training (ESST) has evolved as employers have sought to achieve organizational goals with existing human resources. Such problems as personnel turnover, technological change, and changes in the composition of the workforce have required the provision of additional training for adult workers. Lifelong learning, as a result, is becoming an accepted fact of life in our economically oriented society.

Social, economic, political, and technological factors have influenced the development of ESST programs since colonial times. The apprenticeship, guild, and craft systems of colonial America gave way to the educational institutions and factory schools that provided training in the emerging industrial era. ESST increased markedly during World War I, but decreased as the country experienced economic prosperity during the 1920s. Training was acquired outside the work place or by moving from job to job. The Great Depression did not encourage further development of ESST. The need for skilled workers could be met from the ranks of the unemployed.

ESST came into its own during World War II with the need to convert large numbers of the nonworking population into war workers. The Job Instructor Training program was developed to train supervisors in teaching their skills to other workers. During the period since then, a large number of legislative actions have affected ESST programming, as the U.S. Congress has attempted to respond to social, economic, political, and technological changes. This legislation does not, however, comprise a coherent and comprehensive national approach to employee training.

ESST programs today are affected by similar factors. To comprehend the issues, problems, and opportunities related to ESST programs, it is necessary to understand these factors—that is, the social, economic, political, technological, and socio-technical forces that explain why ESST programs exist as they do today. A significant social factor affecting ESST programs is demography. The median age of the United States' population is increasing rapidly. As individuals stay in the work force longer, retraining will become a necessity if business and industry are to remain competitive. Another social factor affecting training is a changing philosophy toward life and work. Today's workers are concerned with self-realization—including opportunities to develop their skills and abilities. This will contribute to the demand for additional training within the work place.

ESST tend to drop off with the beginning of recession and pick up as economic recovery progresses. Immediate needs for training are limited. Viewing ESST and human resources development from a short range perspective, management tends to trim budgets during economic recession by reducing these activities. Management is beginning to view training as a long-term investment, however, leading to a growing awareness that funds spent for training and development should be considered more a capital investment than an operational cost.

In modern industrial societies, the political trend is toward greater equality. The human rights movement of the past two decades left a legacy of legislation enacted in response to the

interests of various groups as they sought greater equality for their members. Through rules and regulations established by agencies created by this legislation, the organization and operation of business and industry have been profoundly affected (including ESST programs).

One major effect of the technology revolution upon present ESST progams is related to the fact that as technology rapidly advances, it is accompanied by an information explosion. In the interest of remaining competitive, American firms are increasingly using intelligent machines (robots) and intelligent terminals (computers). Trainers will continually have to revise training programs to keep skilled workers current with technology.

Not only is the information age—with its service-industry focus—a product of socio-technical forces, the service industries themselves are socio-technical systems in microcosm. Organizations made up of socio-technical systems usually require more training than other kinds of organizations, contributing to the demand for increased training.

Numerous types and variations of ESST programs exist. This is partially explained by the different purposes for which training programs are designed. All such programs, however, should be characterized by the following elements:

- Top management who value personnel development
- Trainers who are highly qualified and well-rewarded professionals in all aspects of their job
- An incentive plan for employee self-improvement
- An environment in which managers and supervisors are increasingly responsible for personnel development
- Well-equipped training facilities
- An adequate instructional resource center

There is, in the United States, an increasing recognition of the serious gaps between the education and work sectors. The lack of a comprehensive national human resources policy has resulted in training programs that are virtually parallel and operating in isolation from each other. The need exists for a structure to encourage improved linkages among federal employment and training programs, public and private vocational education programs, and private-sector training. The best of all possible worlds in technical skills training involves the establishment of a better linkage between private and public sectors for the purpose of producing more qualified workers.

INTRODUCTION

The objective of employer-sponsored skill training (ESST) is to help to achieve organizational goals through the optimal utilization of human resources. Education and training have evolved in response to the needs that have been identified as attempts have been made to achieve such goals. Training in business and industry, according to Gayeski (1981), has become one of the most rapidly expanding fields in the United States. The expansion of industrial and business education and training is apparent in the investment of major firms in facilities and staffing for these functions. General Motors allocates over $1 billion annually to training, and both American Telephone and Telegraph and IBM spend over $750 million per year (Thomas 1981). In fact, "by almost any definition business and industry are no less a segment of the nation's education system than our colleges and universities, technical institutions and other educational institutions" (Schwaller 1980).

Such activities in business and industry are part of a larger system, according to Lusterman (1977). Education and training are elements, or subsystems, of larger systems by which companies seek to ensure that skilled workers are available as needed and that they are optimally productive. Meshing with education and training, in shared service to these tasks of human resources management and development, are "programs to identify present and future skills needs; to bring new employees into the firm; to assess the capabilities and potentialities of individual employees; to develop appropriate organizational structures and working relationships; to formulate and administer policies respecting compensation, benefits and other working conditions; to design work itself; and to integrate formal training with other developmental modes" (Lusterman 1977, p. 5).

These tasks of human resources management and development have come to be known as human resources development (HRD). As Nadler (1979) notes, "HRD means (1) a series of organized activities, (2) conducted within a specified time, and (3) designed to produce behavioral change. The most common activities in HRD are 'training and education' " (p. 3). Organizations are finding that training and education can solve a variety of human-resources-related problems. Lusterman (1977) sees these problems as: (1) turnover and growth in personnel; (2) changes in the knowledge and skills required by, or available to, a company and its employees; and (3) the need to improve the skills and performance of present employees in their present jobs.

Such problems as these have required the provision of additional training for adult workers. As a result, the concept of lifelong learning is becoming an accepted part of an economically oriented society (Knowles 1980). This is evidenced by the passage of The Lifelong Learning Act as part of the Education Amendments of 1976 (Public Law 94-482). The term *lifelong learning* is usually used "to describe educational opportunities designed to meet the varied needs of Americans past compulsory school age (Hartle and Kutner 1979).

In the past, structured learning was largely restricted to the formal years of schooling (Spaulding 1974). Education was (and continues to be) based on the belief that schools should transfer the culture—knowledge and skill—from generation to generation. Traditionally, most

Americans have believed that formal educational institutions are the best place for this process to occur. Educators refer to this formal education process as *pedology*, the scientific study of the life and development of children (*Webster's New Collegiate Dictionary* 1980, p. 838). Americans have based their principle of universal education on the pedological concept, implementing it through the age of sixteen, generally in a program of twelve grades.

With the advent of increasing socio-technological change, educators have begun to espouse the lifelong learning concept. Adult educators and HRD professionals have learned through experience that adults do not learn as effectively with traditional pedological methodologies as do youngsters. To meet the need for a theory of adult learning, the concept of *andragogy* was developed. Andragogy is "any intentional and professional guided activity which aims at a change in adult persons" (Knowles 1978, p. 19). Knowles (1980) states: andragogy is premised on at least these four crucial assumptions about the characteristics of learners. . . . These assumptions are that as individuals mature—

- their self-concept moves from one of being a dependent personality toward being a self-directed human being;
- they accumulate a growing reservoir of experience that becomes an increasingly rich resource for learning;
- their readiness to learn becomes oriented increasingly to the developmental tasks of their social roles; and
- their time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly, their orientation toward learning shifts from one of subject-centeredness to one of performance-centeredness. (p. 44-45)

Used widely in Europe as early as in the 1950s, the theory—which may provide the unifying force for adult education—came to be known in this country in the 1970s. By applying this concept to business and industry, HRD professionals have provided a variety of activities to employees, from upper management to hourly workers, throughout their careers (Paxton 1976).

When the lifelong learning idea is applied to increasing productivity, regardless of worker type, it generates a positive philosophical approach to satisfying employee needs, interests, and desires. When the lifelong learning approach is effectively implemented, overall quality of life is improved, resulting in individual workers being more satisfied with life's directions. Individuals begin to accept a positive, "can do" attitude toward life—which generates more personal happiness (Paxton 1976). Training is a major factor both in increasing productivity and in employee career development.

HRD is based on career development theories that imply a continual developmental process spanning the work life of an employee. Kaye (1981) points out that career development involves a new way of viewing the worker.

> What is needed today is an employee-organization relationship that blends individual career objectives with overall corporate goals. The type of career development effort that can accomplish this is more than a new goal-setting workshop or an annual supervisor-subordinate career discussion. Instead, it is a new way of thinking about human resources that considers the inter-relationships between the individual and the organization, between all other human resource development activities and the career development program. (p. 36)

Training viewed in this context becomes part of the formal procedure that an employer utilizes to facilitate employees' learning so that their resultant behavior contributes both to the company's goals and their own satisfaction. HRD includes various kinds of learning experiences that contribute to individual and organizational effectiveness. Within the HRD function we find that there are essentially three different kinds of learning experiences provided:

- **Job:** those learning experiences designed to enable the employee to function more effectively on the job he or she now has.

- **Individual:** those learning experiences designed to prepare the individual for a future but fairly well-defined job. There is also the expectation that the individual will move to the new job within a reasonable period of time.

- **Organization:** those learning experiences designed to open the individual to new jobs and performance patterns based on the possible future directions of the organization. (Nadler 1979, p. 252)

These concepts include not only the development of human resources from the organizational point of view, but also from the individual career development viewpoint, and clarify the importance of the relationship between the two. Elaborating on the concept of HRD, Nadler (1979) notes the distinctions among the following functions:

- Training = **job**-related learning experiences

- Education = **individual**-related learning experiences

- Development = **organizational**-related learning experiences (p. 254)

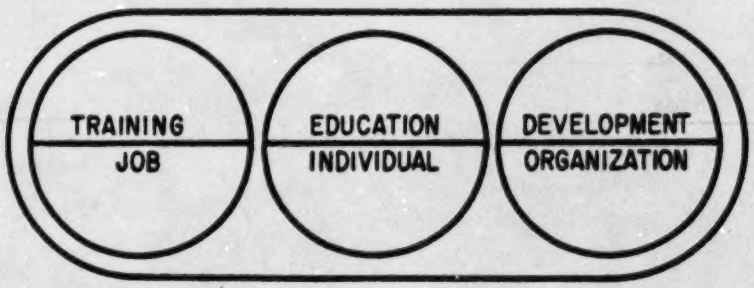
Laird (1978) observes, "Not all training specialists distinguish between 'training,' 'education,' and 'development.' They use the three words interchangeably to describe what they do for their organizations" (p. 9). If one is to understand employer-sponsored skill training and career development in the context of HRD, some definition is needed. Nadler (1979) defines training as "those activities which are designed to improve human performance on the job the employee is presently doing or is being hired to do" (p. 40). Education, he says, consists of those "human resource development activities which are designed to improve the overall competence of the employee in a specified direction and beyond the job now held" (p. 60). Development, he further suggests, is concerned with preparing employees so they can "move with the organization as it develops, changes, and grows" (p. 88).

The concept of human resource development, including all the components defined by Nadler, is illustrated in figure 1. General agreement on the structure of HRD is lacking, yet employer-sponsored skill training may be seen as training for the job, career development as education for the individual, and strategic human resources planning as development for the organization. Together, these activities comprise HRD.

As employers come to see employer-sponsored skill training and career development within the context of HRD, they accept the basic premise that employees are adopting fundamental values that are somewhat less related to material benefits than they recently have been. Henderson (1981), commenting on this shift in values, notes that by 1990 we can anticipate a change in success symbols. Speaking of American workers, she suggests that "their future success symbols, beyond today's materialistic goals, include free time, recognition as a creative

FIGURE 1

THE CONCEPT OF HUMAN RESOURCE DEVELOPMENT



SOURCE: Nadler 1979

person, oneness of work and play, philosophical independence, loving, rewards less by money than by honor, and affection and involvement in social commitments" (p. 17). This position is supported by a report of the Organization of Economic Cooperation and Development (Kerr 1975), which states:

> The acceleration of change and its unpredictable nature, the questioning and often rejection of the values and structures of the past, the blurring of the old demarcation lines between education and work, and the desire for personal fulfillment all combine to suggest that a new look is needed at the ways in which people are equipped to play a useful role in society and to manage their own lives.
>
> Such a positive policy for working life should include the development of more clearly defined criteria for job assessment, merit reward and salary scales; job enrichment; increasing flexibility of work and careers and in the organization of the working day and week; greater participation in decision-making; and the provision of opportunities for career development and training on a more equitable basis. (p. 4)

Kaye (1981) captures the essence of the interrelationships between the individual and the organization, between all other human resource development activities and the career development program, in this observation: "A career development program that is undertaken as a continuing human resource development process can become the integrating force for all human resource programs, linking together activities such as training, succession planning, job posting, and performance appraisal" (p. 36).

Career development programs for workers, programs that include appropriate ESST activities, contribute not only to individual and organizational development, but to the development of society as well. The scope and diversity of employer-assisted career development programs and practices are illustrated in figure 2, developed by Lancaster and Berne (1981).

FIGURE 2

EMPLOYER-ASSISTED CAREER DEVELOPMENT PROGRAMS AND PRACTICES

Individual Career Planning and Counseling

- Career Counseling by Personnel Staff
  - Informal: Career and Educational Information and Advising
  - Formal: Matching People with Job Service
- Career Counseling by Managers/Supervisors
  - Informal: Day-to-Day; Mentors
  - Formal: Career Development Reviews/Appraisal; Performance Reviews
- Career Counseling by Peers
- Career Counseling by Specialized Staff Counselor
- Referral to External Career Counselor
- Downward, Transfer, or "Dual Ladder" Counseling
- Outplacement Counseling (Outreach Placement)
- Individual Career Planning by Self

Assessment

- Battery Testing for Aptitude, Intelligence, Personality, Situational Factors
- Individual Career and Self Analysis
- Performance Appraisal Processes
- Interest Inventory Testing

Career Information Services

- Job Posting
- Communication of EEO and Affirmative Action Programs and Policies
- Communication on Career Paths or Ladders
- Communication of Educational Assistance; Continuing Education Options
- Communication on Training and Development Options
- Career Information (Resource) Center Programs

Organizational Career Planning

- Personnel Succession Planning
- Fast-Track Management Planning
- Personnel Profile Planning
- Internal Recruitment and Development Planning

Training and Development

- Training of Supervisors/Managers in Career Counseling
- Life and Career Planning Workshops
- Job Performance and Development
- Technical Skills Training
- Sponsorship of Outside Training Options for Employees
- Managers' On-the-job Training of Subordinates

Special Populations Programs and Practices

- Minorities
- Women: Subprofessional/Reentry/ Managerial
- Preretirees
- Midcareer Trainees
- Management Trainees
- Outplacement of Terminated Employees
- Subprofessionals
- Disadvantaged
- Handicapped
- Dual Career Families

SOURCE: Lancaster and Berne 1981

THE DEVELOPMENT OF EMPLOYER-SPONSORED SKILL TRAINING

The development of ESST in the United States has been affected by social, economic, political, and technological factors. Says Stewart (1980), "the acceleration of change in the past two centuries, while raising the level of living, has introduced new uncertainties and insecurities into worklife" (p. 1). According to Steinmetz (1976), "the rapidity of change has become a dramatic challenge to training" (p. 1.3). Wenig and Wolansky (1972) cite a U.S. Department of Labor report which indicates that training in industry was changing in the late 1960s as a result of the following factors:

- Society's and industry's concern with human resources
- Unemployment and underemployment
- Scientific and technological advance
- Organized labor's demand for better wages, welfare benefits and working conditions
- Employer requirements for workers (p. 3)

Social, economic, political, and technological change have interacted variously during the history of America, and certain significant events or periods have affected the development of ESST. The following sections review these relevant developments.

Colonial America

"During the colonial period ending with the culmination of the American Revolution . . . [training] can be characterized as being of the on-the-job training (OJT) variety" (Nadler 1979, p. 20). This "OJT" was delivered through a variety of structures, including apprenticeships, guilds, and craft training.

Apprenticeship System

The apprenticeship system was practiced widely throughout Colonial America. Apprenticeship was a "system whereby an experienced person passed along knowledge and skill to the novice, who, after a period of apprenticeship, became a journeyman or a yeoman" (Steinmetz 1976, p. 1.4). The apprenticeship system was not only utilized for training in many trades and crafts, but in medicine, law, and education as well. "As recently as the 1920s it was possible in the United States for a young person to 'read law in the office of a local attorney.' This was a form of apprenticeship . . . which . . . was followed by the apprentice's taking a governmentally supervised examination" (ibid.).

According to Barlow (1967), "there were two kinds of apprenticeship: (1) The voluntary form. . . . The apprentice 'bound himself' by his own free will in order to learn a trade; and (2)

Involuntary apprenticeship [which] provided a means of taking care of poor children and orphans. A master, instead of the town, became responsible for their personal and occupational needs" (p. 15). Apprenticeship was one of the primary educational institutions in colonial America. "The intent of colonial apprenticeship was clearly to provide some learning in the 3 R's in addition to other requirements. . . . A large segment of public elementary education was accounted for in this manner" (ibid., p. 26).

Guilds

Along with the development of the apprenticeship system came the formation of guilds. These groups of craftsmen were formed to afford the members economic advantages. "In essence, guilds created private franchise and at the same time established quality standards of products through quality standards of workmanship (Steinmetz 1976, p. 1.4). Guilds were made up of (1) master workers, who owned the raw materials and tools and who directed the work; (2) apprentices, who lived with masters and received only maintenance wages; and (3) journeymen, who had completed their apprenticeship but were not yet qualified as masters. The difficulty faced by journeymen in becoming masters led to the development of yeomanry guilds. Steinmetz (1976) notes that "conditions forced the skilled workers, the journeymen, to band together for their own protection and advancement. These yeomanry guilds became the forerunners of the modern-day labor unions" (p. 1.5).

Craft Training

Craft training was also offered during the colonial period. "In the United States, early seeds of vocational education were planted in the form of craft training in such areas as gardening and carpentry. As early as 1745, the Moravian brothers established such training at Bethlehem, Pennsylvania, and in 1707 the Methodists instituted similar training at Cokesbury College in Abington, Maryland" (Steinmetz 1976, p. 1.5).

During the 1800s, schools of mechanical arts were developed as a part of the then existing school system, as the United States began to change from a primarily agrarian economy to an industrial one. The growth in training programs that accompanied the change is quite interesting. In "1809, the Masonic Grand Lodge of New York, under the leadership of DeWitt Clinton, established vocational training facilities" (Steinmetz 1976, p. 1.5). "The Boston Asylum and Farm School, founded in 1814, was devoted to the education of orphaned boys" (Barlow 1967, p. 16).

The lyceums and mechanics institutes, which developed during the early 1800s, provided education for mechanics. Several such institutions sprang up during that period.

- Mechanics Apprentices Library of Boston—1820 (Steinmetz 1976)
- New York Mercantile Library—1820 (Steinmetz 1976)
- Gardiner Lyceum—1823 (Barlow 1967)
- Franklin Institute, Philadelphia—1824 (Steinmetz 1976)
- American Lyceum of Science and the Arts—1826 (Barlow 1967)
- Maryland Institute for the Promotion of the Mechanic Arts, Baltimore—1826 (Barlow 1967)

- Ohio Mechanics Institute, Cincinnati—1828 (Barlow 1967)
- Lowell Institute, Boston—1836 (Steinmetz 1976)
- San Francisco Mechanics Institute—1854 (Barlow 1967)
- Cooper Union, New York—1859 (Nadler 1979)

Also developed during this period were manual labor academies. Students studied in the academy and also worked in a local shop or factory. The Rensselaer Institute founded in Troy, New York, in 1825, is a notable example of this type of school (Barlow 1967).

The Emerging Industrial Age

The Industrial Revolution of the Eighteenth Century brought with it concern for new ways of training workers. Beginning about 1860, a new feeling concerning training and vocational education became apparent. "The beginning of a national worklife training policy is commonly traced to the 1860s, when for the first time fewer people were at work in agriculture than in nonagriculture" (Stewart 1980, p. 6).

Educational Institutions

The factory system struck "deadly blows toward apprenticeship—[and] it was recognized that the decay of the apprenticeship system made industrial education a national necessity" (Barlow 1967, pp. 27 and 33). The need for schools designed to develop skilled mechanics was a factor in the passage of the Morrill Land Grant Act of 1862. "The Morrill Act of 1862 is seen as the political expression of the need in the new industrialism for the kind of professional and tecnnical training not provided" (Stewart 1980, p. 6). The mechanization of agriculture necessitated training for both mechanics and farmers. According to Stewart (1980):

> The Morrill Act provided each state with sufficient public land to support at least one "A&M" college for "such branches of learning as are related to agriculture and the mechanical arts." The aim, as stated in the preamble, was "to promote the liberal and practical education of the industrial classes.". . . No doubt these institutions contributed to the pre-work training of engineers and other professionals for the technical needs of industry. More important . . . was the role of the land grant colleges and their adjunct experimental stations and extension services in serving the lifetime needs of working farmers in an industrializing agriculture—and in the education of their sons who, as they left the family farm, comprised an important force in the new industrial society. (pp. 6-7)

The Morrill Act effectively responded to the proponents of agricultural and mechanical education. The resulting system of colleges was, however, "in some instances contrary to expectations, largely because the colleges did not seem to make it their 'leading object' to bring agriculture or mechanics into prominence" (Barlow 1967, p. 32).

The needs of employed workers for skill training also led to the establishment of evening vocational training classes. Cooper Union in New York offered such classes in the 1850s (Steinmetz 1976). "By 1886, private manual training schools were established in Cincinnati, Cleveland, Toledo, and Chicago, and public institutions of a similar sort were established in Philadelphia, Baltimore, and Omaha" (Ibid., p. 1.6).

Factory Schools

As the growth of industrialization continued, "many employers supported some form of industrial education. Those who could do so preferred to conduct their own systems of education" (Barlow 1967, p. 44). These in-plant training programs came to be known as factory schools. The factory schools were established so that the needs of industry for skilled workers could be met. Nadler (1979) reports that "increasing complexity of industrial production also encouraged the development of factory schools designed to produce a workforce trained for a particular employer" (p. 22).

One of the pioneer factory schools was established in 1872 at Hoe and Company in New York City (Steinmetz 1976). Clark and Sloan (1958) note that within a period of thirty years, from 1872 onward, at least five corporation schools were established, and that by 1916 the total enrollment in schools established in factories and corporations had risen to sixty thousand. According to Nadler (1979), "in 1888 the Westinghouse Company established a factory school, and by 1898, Westinghouse was providing training for its engineers" (p. 22).

Similar factory schools were established at "General Electric Company and Baldwin Locomotive Works in 1901, and at International Harvester Company in 1907. . . . Western Electric, Goodyear, Ford, and National Cash Register were also in the forefront of this educational activity" (Steinmetz 1976, p. 1.6). The famed General Motors Institute got its start in 1919, when it was the School of Automotive Trades in Flint, Michigan. "This was established to provide part-time training programs for employees in Flint's growing complex of automobile plants" (Nadler 1979, p. 24).

R. Hoe and Company offered evening classes twice weekly in English, mechanical drawing, arithmetic, geometry, and algebra. "The studies were directly related to the work of the firm" (Barlow 1967, p. 44). General Electric "established an apprenticeship system which combined the activities of shop and classroom. . . . Included in the studies were courses in interpretation of mechanical drawings, sketching, and design of auxiliary tools required for modern manufacture" (ibid.).

Baldwin Locomotive Works of Philadelphia established an extensive program for three classes of its personnel (Barlow 1967):

- Those who had completed elementary school but who had not reached sixteen years of age. They attended school three evenings a week for three years and studied arithmetic, geometry, mechanical drawing, and shop practice.

- Those over eighteen who had completed a more advanced educational program. This group attended school two evenings a week for two years, studying chemistry, advanced mathematics, and mechanical drawing.

- Graduates of colleges and other advanced institutions. They were not required to attend classes but were required to read technical journals and turn in synopses of the various articles. (p. 44)

The orientation and training of new workers to perform the specific tasks expected of beginning workers were the main objectives of most factory schools. Says Nadler (1979), "Factory schools were mainly concerned with preparing new workers to enter the workforce. Once [workers were] in the workforce, apparently little was done in terms of upgrading or improving skills" (p. 22).

Associations

By the early 1900s manual training and vocational education programs were becoming fairly common in the United States. Individuals in the field began to see a need to unite in the interest of mutual assistance, protection, and professional strength. "In 1906, 250 key educators interested in industrial education met at Cooper Union in New York City and formed the National Society for the Promotion of Industrial Education. In 1914, the Vocational Association of the Midwest was originated with similar goals" (Steinmetz 1976, p. 1.6).

The passage of the Smith-Hughes Act in 1917 is thought to have influenced the National Society for the Promotion of Industrial Education to change its name, in 1918, to the National Society for Vocational Education. Then, in 1925, the National Society for Vocational Education and the Vocational Association of the Midwest merged into the American Vocational Association (AVA) (Steinmetz 1976). This association was made up of individuals in industry and education.

Many of the members of AVA who were operating training programs in industry saw a need for an organization designed to respond to the special problems of training in industry. "In 1913, a meeting was held at New York University, at which time the National Association of Corporation Schools was organized. . . . In 1920, it changed its name to the National Association of Corporation Training, and shortly afterward it merged with the Industrial Relations Association of America to become the National Personnel Association . . . in 1923, the name was . . . changed to the American Management Association" (Steinmetz 1976, p. 1.8).

The World War I Era

When the U.S. Congress issued a declaration of war in April of 1917, "the nation's energy was immediately mobilized: manpower, industry, transportation, agriculture, natural resources, and finance. . . . It was determined that the trades and occupations most in need of attention were the automotive, machining, metal fabrication, forging, electrical, building, and drafting" (Barlow 1967, p. 241).

Apart from the complexity of methods of production, World War I created an emergency that helped to focus the attention of industrial establishments on the need for training programs to produce additional skilled workers. The situation during this period is portrayed vividly by Steinmetz (1976):

> With the outbreak of World War I, emergency became the key word. There was a vital need for a "bridge of ships" to Europe so that the United States could do its part to "make the world safe for democracy." The Emergency Fleet Corporation of the United States Shipping Board set up an education and training section. It was found that 61 shipyards with 50,000 workers had an urgent need for ten times as many workers, but none were [sic] available. The only answer was to train them. (p. 1.9)

This training problem was solved through adoption of the Herbartian steps of show, tell, do, and check (Steinmetz 1976). This method was so effective that in the early 1920s it was utilized at the Dunwoody Institute.

Also emerging from the U.S. Congress in 1917 was the Smith-Hughes Act, at that time overshadowed by the war emergency. This Act "provided a permanent appropriation of approximately $7 million annually for vocational education in agriculture trades, home economics, industry, and teacher training" (ibid., p. 1.7).

The 1920s

The economic prosperity that followed World War I "tended to discourage the application of training to industrial situations" (Steinmetz 1976, p. 1.9). "During the high level of prosperity, employers seemed little concerned about the need for providing training for their employees. By increasing wages and allowing for lower standards, it was possible for even marginal employers to muddle through" (Nadler 1979, p. 25).

The Smith-Hughes Act of 1917 had provided for a Federal Board for Vocational Education, and during the 1920s, "industry was being served by [this] unique and valuable training service" (Steinmetz 1976, p. 1.9). The Board provided several services to state boards created by the Smith-Hughes Act (Barlow 1967).

- Services related to the training of trade and industrial teachers.
- Service concerned with the preparation of educational trade analyses . . . which would accurately identify various aspects of the teachable content of a trade.
- Service concerned with foreman training. Employees of state boards for vocational education conducted hundreds of foreman conferences in industry.
- Service . . . in connection with developing simple and inexpensive methods of conducting local surveys in order to secure information about industrial employment and training needs. (p. 22)

One of the main objectives of the industrial education staff of the Board "was to develop a sound program of part-time instruction of youth who had definitely left school and had entered into wage-earning employment (Steinmetz 1976, p. 1.9). In addition to this program, "another type of training, that provided by the correspondence school, was serving the American wage earner" (ibid., p. 1.10). It was said in 1921 that probably more industrial workers in America had gained the technical phases of their trades from correspondence schools than by any other means.

Stewart (1980) reports that "there was growing rejection by educators and employers of the view that the elementary schools could (or should) relieve industry of the burden of technical education. . . . Apprenticeship continued to provide firm-specific or occupation-specific training in a limited number of traditional trades for only a small percent of school leavers" (p. 8).

Throughout the 1920s, education of youth for work life continued to have limited formal vocational content. Stewart (1980) raises a question as to how American workers were trained as the United States began to take over leadership in the new world of technology. According to Stewart—

- The most obvious answer is that they were educated in the public schools for the most essential requirements of an industrial society.
- As to private policy, firm-specific skills were obtained through formal and informal on-the-job training in the company, and occupational-specific skills through apprenticeship or by pirating workers from other companies.
- Probably most skill training came from on-the-job experience as workers moved from job to job as a result of quits or layoffs, or by promotion within a firm . . . without benefit of formal training programs.

- Finally, there was a considerable if unmeasurable amount of educational activity on the part of adults outside the workplace. Not insignificant were literacy classes for immigrants, the Carnegie and other public libraries, correspondence and other proprietary schools, county agents, workers' education by unions and radical political groups, reading and discussion groups, debating societies, the chautauqua*, and other forms of popular education. (pp. 8-9)

In 1929, perhaps in response to the perception (noted by Stewart) that education continued to have limited formal vocational content, the George-Reed Act was passed, authorizing "appropriation of $1 million annually to expand vocational education in agriculture and home economics" (Steinmetz 1976, p. 1.7).

The Great Depression

The 1930s did not encourage further development of ESST. Employers had so large a pool of unemployed workers from which to draw skilled workers that it was not reasonable for them to employ unskilled workers. Stewart (1980) writes, concerning the Great Depression and its impact on employee training, "With large-scale unemployment through the thirties, human capital accumulation by adult workers must have been negative as more skills were lost through disuse than acquired by education, training, or job experience. Formal training within industry was abandoned; apprenticeship came to a complete halt" (p. 10). Speaking of this same period, Steinmetz (1976) says:

> Now the phrase 'We don't need training,' mouthed by shortsighted management, was changed from a complacent comment to a plaintive cry of managerial bewilderment. The Depression years of the '30s wrecked many internal training programs. It was obvious to management that their need for workers could readily be met from the ranks of the unemployed. (p. 1.10)

Beginning with the Great Depression, says Stewart (1980), "the time pattern has been for the employer training to drop off with the beginning of recession and to pick up again as recovery gets under way" (p. 27).

Training activities outside of industry increased during the 1930s in response to the increased leisure time of unemployed persons. Barlow (1967) suggests that whereas "the value of industrial arts as a solution to the problem of excess leisure time was well known prior to the depression . . . this value now seemed especially relevant" (p. 270). Steinmetz (1976) notes that "hundreds of thousands of men and women occupied their spare time by learning leatherwork, weaving, painting, chair caning, jewelry making, etc. . . . Many times these articles were sold to help relieve the economic insecurity" (p. 1.10). As a result of this experience, people became both training-conscious and conscious of their learning potential for maintaining and promoting their personal welfare. "To resort to new vocational efforts when the need arose became a part of their philosophy" (ibid.).

Governmental concern for training of the unemployed was apparent in the various public works projects that were initiated during the 1930s. Says Nadler (1979), "The Civilian Conservation Corps and the National Youth Administration involved the job training of students and young workers. The Bureau of Apprenticeship and Training was established in 1934, and although it has gone through many reorganizations and name changes it is still part of the HRD

*An institution of the late 19th and early 20th century providing popular education.

scene today" (p. 25). During the 1930s, also, the U.S. Congress enacted the George-Ellzey Act (1934) and the George-Deen Act (1936). The George-Ellzey Act replaced the George-Reed Act of 1929 and further expanded vocational education. The George-Deen Act authorized an annual appropriation of $14 million for "vocational education in agriculture, home economics, trades and industry, and, for the first time, distributive occupations" (Steinmetz 1976, p. 1.7).

World War II

The Depression period was followed by the Second World War—a period when employer-sponsored training became widespread. The emergency created by the war and the resulting composition of the labor force promoted the widespread practice of training workers. According to Nadler (1979), "The sudden and immediate need to convert large numbers of our nonworking population into workers and military men heightened the role of training. Suddenly, almost everybody was either training or being trained" (p. 26). This notion is elaborated upon by Stewart (1980):

> The large reserves of labor available for wartime expansion of production and employment included chiefly persons with no occupational experience or training, principally women and youth and the unemployed, many with irregular job experience or exposure to work discipline. (p. 10)

Between 1940 and 1945, the labor force in the United States increased by 7 million and the armed forces by about 12 million. About 8 million of the individuals who entered the labor force during this period represented an influx beyond normal expected growth (Stewart 1980). Virtually all able-bodied young men were drafted into the armed forces and large numbers of young women volunteered for various women's military corps. Many homemakers also entered employment in order to supplement family income and/or to assist with the war effort. An emergency was created, due to these conditions, to which the new war industries as well as the old, established industries had to respond by training workers.

So much pressure was brought to bear on the government by the emergency that training of defense and war production workers was provided for by the U.S. Congress. Between 1940 and 1946, Congress made available a total of nearly $327 million for the training of these workers (Woytinsky 1953). The Vocational Education for National Defense Act (VEND) provided an additional $80 million annually to the established state systems, mostly for training at below postsecondary levels, but also for training in colleges and universities and for payment for use of private facilities. The wartime VEND Act was a landmark in federal intervention to assist a variety of groups of adult workers in adjusting to changing labor market conditions (Stewart 1980).

In 1946, the George-Barden Act was passed as an amendment to the George-Deen Act. It increased the appropriation for vocational education to $39 million annually and authorized funds for research and vocational guidance (Steinmetz 1976, p. 1.8). Also passed at this time was the Employment Act of 1946. The Act provided for activities to "promote employment, production, and purchasing power" and established the Council of Economic Advisors (Stewart 1980).

Job Instructor Training (JIT) Program

As important as the vocational training provided through the VEND Act proved to be in preparing inexperienced workers for the war effort, on-the-job training was probably more

important. "Starting with the reformulation of an on-the-job training approach, the Job Instructor Training program was developed—quickly shortened to JIT. It was a program oriented especially to the first- and second-line supervisors whose skill in explaining their job know-how was essential to the mushrooming defense industry" (Steinmetz 1976, p. 1.11). Developed by "Skipper" Allen, JIT became the gospel whereby supervisors assumed the responsibility for training their new employees (Nadler 1979).

JIT taught supervisors how to instruct, dealt with human relations between supervisors and workers, and taught means for determining the best job methods. Says Steinmetz (1976):

> It was quite natural, then, that a Job Relations Training program (JRT) was developed. This was quickly followed by a Job Methods Training program (JMT). With so many workers unfamiliar with the industrial environment, a safety emphasis was needed. Hence a Job Safety Training program (JST) was a natural development. A Program Development Training course (PDT) was developed for executives unfamiliar with training techniques. Each program was a specialized facet of the fundamentals inherent in the JIT card, which by this time had become famous. (p. 1.11)

The G.I. Bill

Probably the greatest impact on work life education and training that resulted from World War II was the G.I. Bill of Rights (the Servicemen's Readjustment Act of 1944). "By 1956, one out of two World War II veterans had availed themselves of its educational provisions—roughly seven and a half million people" (Stewart 1980, p. 12). Disabled veterans were provided for by the Vocational Rehabilitation Act of 1943, under which benefits were larger and more open-ended than those of the G.I. Bill (ibid.). Private schools emerged throughout the country to accommodate the large numbers of veterans seeking training (Nadler 1979).

From the World War II era on, training has been an established fact in the world of employment. "During the war period, more employees were assigned HRD responsibilities, and in 1942 several of them formed an organization which today is known as the American Society for Training and Development (ASTD). From this period on, HRD emerged as a discernible aspect of organizational behavior, though still labeled as training" (ibid., p. 27).

The Postwar Period

The development of the organization that was to become ASTD occurred "at the very time when many people predicted that training would go into a tailspin. Now that the war was nearly over, surely this function of training and the training director would be abandoned. The fact that it has grown each year to far exceed anyone's previous estimate shows the lack of foresight that dominated the thinking of many personnel seers at the close of the war years and shortly thereafter" (Steinmetz 1976, p. 1.13).

Interest in training on the part of private employers, unions, and the government continued to increase during the period following the war, contrary to predictions. Woytinsky (1953) reports that in 1947, for example, the International Union of United Automotive, Aircraft, and Agricultural Workers of America ran schools in seven states during the summer attended by twenty-five hundred workers; weekend conferences and institutes attended by eighteen thousand workers; and during the year, individual courses completed by thirty-three thousand workers. The Textile Workers' Union of America also held seven one-week institutes in the summer of 1947, with an enrollment of nearly three hundred and fifty students.

more importantly, detracting from the national welfare by wasting vital human resources. These problems were to be overcome through the Act by, among other measures, giving federal assistance to communities, industries, enterprises, and individuals in areas needing redevelopment. Although the Secretary of Labor was, under the provisions of the Act, required to determine the occupational training or retraining needs of unemployed and underemployed individuals residing in the redevelopment area, in consultation with the Secretary of Agriculture, it was also the responsibility of the Secretary of Labor to provide any necessary assistance for setting up apprenticeships and to promote journeymen and other on-the-job methods of training that are characteristic of industries.

- **The Trade Expansion Act of 1962.** The Trade Expansion Act of 1962 provided for retraining opportunities as well as special unemployment benefits for workers whose jobs were certified to have been lost because of export competition. (Stewart 1980)

- **The Manpower Development and Training Act (MDTA) of 1962 (P.L. 87-415).** Perhaps one of the most elaborate efforts of government to curb unemployment and underemployment culminated in the passage of the Manpower Development and Training Act of 1962 (MDTA). The Congress recognized the need for more and better trained personnel in many vital occupational categories. Section 101 of this Act states that even in periods of high unemployment, many employment opportunities remain unfilled because of the shortages of qualified personnel. The concern of the Congress stemmed from a number of factors—automation and other technological developments, foreign competition, relocation of industry, and shifts in market demands—which were considered responsible for rendering the skills of many persons obsolete. The main purpose of MDTA was to require the federal government to develop information and apply methods that would help in dealing with the problems of unemployment. The government was required, under the Act, to promote and encourage the development of broad and diversified training programs, including on-the-job training.

  Norris (1980) indicates that when MDTA on-the-job training (OJT) started in 1964, the government offered to support ten thousand positions in private industries and OJT enrollment rose to 115,000 in 1968. The Secretary of Labor's 1965 Report showed that OJT approvals in 1964 covered some four hundred occupations. Under MDTA on-the-job training, the training of workers in one establishment for subsequent employment in other, similar establishments started in 1963. Also, the National Alliance of Business program known as Opportunities in the Business Sector (NAB/JOBS) began, in 1968, to provide OJT and remedial education to trainees. Government subsidized training was, in this program, combined with the business sector commitments to hire disadvantaged workers.

- **The Economic Opportunity Act of 1964 (P.L. 88-452).** Another in the series of the government's contributions to the development of training was the passage, in 1964, of the Economic Opportunity Act. The Congress sought by this Act to open the opportunity for education and training to everyone as a means of combating poverty in the midst of plenty by making use of the programs available under the Manpower Development and Training Act of 1962, including on-the-job training of workers.

- **The Government Employees' Training Act of 1968 (P.L. 85-507).** This Act was designed to lead to improved public service, dollar savings, and the building and retention of a permanent cadre of skilled and efficient government employees well abreast of scientific, professional, technical, and management developments both in and out of government.

The reasons for the unions' training activities, according to Woytinsky (1953), included the need to (1) ensure maintenance of craft standards, (2) control entrance to the trade and labor supply, (3) circumvent the hesitation of employers to train workers who might be hired by their competitors, and (4) polish up rusty skills and give workers an opportunity for improvement.

The original emphasis on skill training in manufacturing expanded both to other types of organizations and organizational roles. For example, Nadler (1979) notes that "the early 1950's [sic] was a period of intensive supervisory training . . . supervisory training even became a popular offering in public school evening programs" (p. 28). According to Steinmetz (1976), "Since the '50s, training has also come to encompass workers in government, utilities, and financial institutions, for example—in fact, it is an essential in every area of employment" (p. 1.13). Nadler (1979) reports that "on the government side, HRD for all government workers was legitimized through the Government Employees Training Act of 1958" (p. 79). Although federal government training activities had long existed for some employees, this Act encouraged training activities for all employees.

The period from the 1950s to the present can be described as one of rapid social, economic, and—especially—technological change. Tracey (1974) describes part of this period as

> a period during which instant, worldwide visual communications became commonplace; a decade of space spectaculars; ten years of exciting growth in computer sciences; a period of significant social change; an era of revolutions and rising expectations; a time of turbulence and, unfortunately, often of violence; a period of economic upheaval, of increased and of rapid obsolescence of skills. (p. vii)

The technological changes have ranged from the use of more versatile materials, such as synthetic products, to developments in electronics that have made possible automation (robotics) in industries and the use of computers. What was written about the 1960s in 1966 will probably be true also of the 1980s (Tickner 1966):

> The Sixties will place a premium on the seven-league-boot kind of improvement which leapfrogs the conventional and strives for the breakthrough in new methods and new technology. Process will replace process and product will replace product—as revolutionary rather than evolutionary changes go into effect. (p. 5)

Tickner (1966) indicates that training has received much greater attention since World War II because technology is replacing less-skilled workers with machines and the more-skilled and expensive workers remain. The impact of technological change on the work force is enormous. The elevator, for example, initially created many jobs by making high-rise buildings practical. The subsequent development of automatic elevator systems has virtually eliminated one of the jobs created—that of the elevator operator. As Deutsch (1979) points out, the essence of technological change is that it is unpredictable; it has created many jobs and eliminated many others. Many of the new jobs created through technological change require either the training or retraining of workers. This explains why the training of workers has received so much attention from both the government and the private sector since World War II. Some acts of the U.S. Congress that apply to the federal government (the country's largest employer), as well as to private employers concerning the training of workers, include the following:

- **The Area Redevelopment Act of 1961 (P.L. 87-27).** This Act was passed because of the concern of the government for persistent unemployment and underemployment in some areas of the country. There was a recognition that such unemployment and underemployment were causing hardship to many individuals and their families and,

- **The Comprehensive Employment and Training Act (CETA) of 1973.** The Comprehensive Employment and Training Act promoted further development of ESST in that private sector on-the-job training costs for CETA clients were underwritten by the U.S. Department of Labor. The steps taken by the Department of Labor that had far-reaching effects on this type of training program included the provision that all OJT participants must be hired by the employer prior to the beginning of training. This change was instituted to discourage the termination of employees after the period of subsidized employment had expired. (Norris 1980)

- **The Trade Act of 1974.** The Trade Act of 1974 expanded the provisions of the Trade Expansion Act of 1962 and made it possible to certify large numbers of plants and workers as eligible for benefits to compensate them for losses resulting from import competition that results from United States trade policies. (Stewart 1980)

Despite these legislative actions, "it is probably fair to say that there is not now, and never has been, any coherent, comprehensive approach to employee training in America. Certainly there is no comprehensive federal policy, although a 1978 Congressionally-mandated National Commission for Employment Policy is working to develop a framework for a national policy to insure the full development and utilization of human resources" (Peterson et al. 1982, p. 105).

Lacking such a policy, the United States continues to experience the pattern in which ESST drops off with the beginning of recession and picks up again as recovery gets under way, with public training moving in much the same way. In countries with an active HRD policy, public labor market training is increased contracyclically as employment and private training fall off in recession, and it is then allowed to decrease with economic recovery (Stewart 1980). In the United States, long-range plans following clear national policy for training and human resource development are still awaiting new frameworks and a reorientation of emphasis that will be more concerned with the broader concerns of HRD.

STATUS OF EMPLOYER-SPONSORED SKILL TRAINING

Employer-sponsored skill training (ESST) is having a profound impact on business and industry. As it continues to become more dynamic and creative, ESST will make an even greater contribution to organizational effectiveness. The growth of ESST programs is quite apparent. The Conference Board, the Carnegie Corporation, and the Rockefeller Brothers Fund recently completed a survey of seventy-five hundred private corporations. It was found that 54 percent of those corporations offer functional/technical skill training. These seventy-five hundred companies invest $860 million a year in technical skills training (Laird 1980).

The rapidly increasing scope of ESST has influenced the American Society of Training and Development (ASTD) to form the new Division of Technical and Skill Training. ASTD recognizes technical and skill training as pertaining "to all types of 'hands-on' crafts, techniques, methods, arts, and professional ability, including basic human relations skills" (Laird 1980, p. 18).

Corporate training programs are today somewhat less affected by fluctuating economic conditions that have, in the past, resulted in decreased programming with the beginning of recession, and increased programming with economic recovery. This is due to the fact that educational efforts in industry today are held in high regard by executives (Carnevale 1981a, 1981b; Lippitt 1982). Considerable evidence exists that management has found training to be the best method of remaining economically competitive in a rapidly advancing technological society (Hahne 1977; Schiff 1980; Wood 1976).

As previously noted, ESST is a part of a more sophisticated and comprehensive concept known as human resources development (HRD). Training and development professionals, as well as others, support HRD as a strategy for transforming workers into more productive and self-fulfilling members of society. The focus on more humanistic treatment of the work force has resulted as employers have recognized the effects of dehumanizing industrialized jobs—those that consist of simplified, repetitive, single-skill tasks.

As the work place became less and less rewarding for employees, business and industry began encountering a host of difficulties, including lowered productivity, increased absenteeism, reduced product quality, and general employee unrest. Employers attempted to counter these problems with improved technology and HRD. Ginzberg (1966) notes the economic implications of deemphasizing the focus on capital and increasing that on HRD. The potential for helping workers gain self-satisfaction is apparent in his account:

> The anachronism of an economics that was centered on capital to the neglect of the human factor in production . . . and the transformation of the economy from a dependence on unskilled, physically strong laborers to one in which both output and distribution depend increasingly on men [and women] of general and specialized education and skill—these . . . major occurrences have left their mark. . . . In fact, the public has caught the essence of the new commitment, which is that an affluent democratic society can grow from strength to strength if it has the wisdom and courage to invest in the development of its people. . . . Not only will we have a better society, but we will also have a more productive economy. (pp. 6-7)

Investment in the development of people is today increasingly being promoted for the future of the American economy and Americans through training and development (Anderson and Anderson 1982; Lippitt 1982; McLogan 1982; O'Callaghan 1981).

Factors Influencing the Nature of Today's ESST Programs

To comprehend the issues, problems, and opportunities related to ESST programs, it is necessary to understand the factors that influence the situation—that is, the social, economic, political, technological, and socio-technical forces that explain why ESST programs exist as they do today.

Social Factors

Society is constantly changing. The composition of the United States's population has been drastically changed, for example, by immigration from various countries experiencing political unrest and economic difficulties. Several of the social forces that affect ESST are discussed in the following sections.

Demographic forces. A significant social factor affecting ESST programs is demography. The median age of the United States's population is increasing rapidly. Consequently, fewer and fewer young people will be entering the work force. This means that an increasing proportion of the labor force will be in the prime age category (between the ages of twenty-five and fifty-five) in the 1980s (O'Callaghan 1981; Schiff 1980). O'Callaghan (1981) reports that in 1970, the twenty-five to forty-five age group comprised 40 percent of all workers, while in 1980 it had increased to 45 percent. It is predicted that by 1990 it will represent well over 50 percent of the work force. This translates to an estimated 60.5 million workers ("America's Human" n.d.).

Other demographic trends that are currently affecting the labor force and probably will continue to do so in the future are noted by O'Callaghan (1981) and Schiff (1980). These trends are as follows:

- The importance of male teenagers and young adults to the labor force is declining.
- Women of all ages represent an increasing percentage of the labor force.
- Males over the age of about fifty-five to sixty represent a declining percentage of the labor force. This trend will change in the future in response to economic pressures and any changes in the mandatory retirement age. (Many experts believe that there will be a shift away from early retirement.)
- Unemployment will be somewhat less of a problem in the coming decade because fewer youth will be available to enter the labor market.
- Underemployment is becoming a greater problem because the highly educated "baby boom" workers are finding and will continue to find more competition for the same middle-level jobs.
- The labor force is made up of and will continue to include more minority and disadvantaged workers.

- The labor force, in general, will become more productive, educated, experienced, and stable.

As a result of these demographic changes, the American work place will be characterized by an increasing number of older workers and a shortage of younger workers ("America's Human" n.d.). The implication of these demographic changes for ESST is that adults will probably make multiple career changes. As individuals stay in the work force longer, retraining will become a necessity if business and industry are to remain competitive (Wood 1976).

Changing values. Another social factor affecting training is a changing philosophy toward life and work. Keen (1981) notes that "a new breed of American is quietly forging a fresh way of life and style—based on a radiant shift in personal values" (p. 15). Also, "There is a growing trend among younger workers away from postponement of self-gratification and toward a psychology of entitlement" (Lancaster and Berne 1981, p. 14). Most Americans indicate that they want to work harder but are unwilling to do so without increased incentives (O'Callaghan 1981; *Work and Families* 1980; Yankelovich 1982). A *Psychology Today* survey (Yankelovich 1982) found that self-growth is rated as most important by workers—including opportunities to develop one's skills and abilities. The younger worker is especially concerned with immediate or short-term compensation.

It is generally believed that Americans made their country great by applying the traditional work ethic. In the past, the way to success and a better life came through education and hard work, with eventual rewards. The incentives for most people were the rewards of money and status. Loyalty to the company was the norm, and personal identity was derived through one's job.

Today, some Americans are turning things upside down and creating what Nietzche called "a transvaluation of values." Keen (1981) suggests that these Americans are inventing new life-styles—forging new myths and visions of the good life with their own definition of happiness. A 1980 White House Report on Work and Families indicates that the new workers have different expectations and goals than their parents and place higher demands on the work place—demands that include more benefits, higher pay, flexible work hours, and higher levels of satisfaction and personal fulfillment (*Work and Families* 1980).

The changing values of this new generation of American workers is one of the primary reasons why industry is restructuring the human side of management in an effort to increase productivity. The following are three causes for the change in values of the new generation ("The Coming Industrial" 1981):

- Today's production line workers have a far higher level of education than at any other time in history.
- Workers have less concern regarding their employment security than was true of their parents or grandparents.
- There is a flood of foreign-made products pouring into the United States. Foreigners are eating our lunch and the situation won't be reversed until there is a fundamental restructuring of relationships between workers and their employers.

Keen (1981) suggests a profile of this revolution in values. He offers the following descriptions of the values revolution taking place:

- Discontent with the world of work is widespread. Sixty percent of college students several years ago believed that "hard work does not pay." Seventy-five percent of adult Americans are in some way seeking new meaning for self-fulfillment. Many writers have referred to this phenomenon as "mid-career crisis." People are retiring early and taking up a second career life. People in high-stress and high-paying positions are dropping out for a simpler, more relaxed life away from cities and polluted environments.

- Even the vast majority of Americans who stay in their jobs are increasing their demands for humanizing and personalizing of the office and factory. Business and industry will yield to the employee's demands or suffer from a host of social and economic problems.

Yankelovich (1982) concludes from his and other research studies that the following two items relate to the "new workers:"

- Workers can choose either to work hard or just get by. However, only one in five says he or she does the best job possible.

- Workers assume that any increase in productivity will benefit only consumers, stockholders, or management.

Comments by Hall and associates (1978) and by Lancaster and Berne (1981) provide several important generalizations about American workers:

- Marriage, family, and career are again important in society.

- The quality of life for workers is affected by careers.

- Mobility of workers is accepted by most large organizations. Through either acceptance or rejection of transfer and promotion, people feel greater freedom and mobility in our society.

- Social equality for women and minorities has increased through education and employment that developed through interesting careers.

- The average American worker's education level has increased, giving him or her greater career aspirations.

- The good jobs are fewer, creating less opportunity for individuals to reach greater self-fulfillment without career development programs.

Musick (1980) notes that today's worker "may be characterized as overentertained, overstimulated, eyeball quick, visually oriented, time conscious, restless, and vocally critical" (p. 3). Rosow (1981) suggests that if American workers are to achieve social adjustment and a sense of self-worth, the nation must advance the quality of work life through greater job satisfaction. Training and retraining can be the means for providing a healthy balance among self, family, and job interests (Schiff 1980; Varney 1981). When employees are adequately trained to perform their jobs, they feel competent and valued, and believe that they are esteemed by their peers and supervisors (Hanson and Allen 1976). Margolis (1977) suggests that what counts with workers today is self-realization—satisfaction in leisure activities, experiences in the working environment that enhance self-esteem, and, above all, the opportunity to make one's own choices. The impact of social change on training is affirmed by Sutton (1975):

> Social change has given us impetus to design new ways to ensure the optimum development and utilization of our people. For example . . . an "upgrade and transfer plan" allows . . . employees to select and apply for craft jobs they aspire to and specific retraining must be available. . . . A variety of remediation programs and assessment programs help . . . employees qualify for the jobs to which they aspire. (p. 5)

The HRD concept works within the premise that all workers are interested in several basic ideas—that is, less domination and more freedom to make choices, opportunity to receive training within the work place that provides career enhancement, and the possibility of performing work at those times most advantageous to personal desires. The ultimate concern for business, industry, and the individual is their ability to seek cooperatively the relationship that benefits each within a rapidly changing society. Hanson and Allen (1976) succinctly express the situation:

> Organizations that assist their employees in dealing with career concerns are moving toward fulfilling the social responsibility of a mature organization. Such assistance gives the employee a feeling that the organization cares about him [or her] as an individual. The resulting atmosphere of increased openness and trust can strengthen the psychological contact and commitment between the individual and the organization. (p. 12)

Economic Factors

As previously noted, ESST tends to drop off with the beginning of recession and pick up as economic recovery progresses. In periods of increased economic activity the demand for workers results in the hiring of unskilled workers, and ESST programs are needed. When the economy slows down, for any of a number of reasons, and the unemployment rate is high, an adequate number of skilled workers are available to fill most job openings. "When the economic going gets rough, training is the first thing cut!" (Nadler 1979, p. 296). Immediate needs for training are limited. Viewing ESST and HRD from a short range perspective, management tends to trim budgets during economic recession by reducing these activities. Their profitability cannot be demonstrated very easily in the short run. Says Nadler (1979), speaking of economic recession:

> during the depressed economic situation, human resource development (HRD) tended to be re-active rather than pro-active. Indeed, it is likely that too many HRD directors weren't even reactive, but continued doing business in the same old way. (p. 295)

Social responsibility and economic feasibility come into conflict when business and industry become involved with what might be viewed as social concerns. The true test comes when a corporate activity, such as training, unduly interferes with the company's function—to make a profit. Carnevale (1981a), in a report to The National Issues Committee of ASTD, reinforces this notion:

> Private employers are not likely to jeopardize the essential mission of private firms in the interest of social goals which are traditionally the mission of public institutions. At best, private firms can be expected to cream off available applications referred through public programs, hiring those most nearly ready for firm-based job-specific training. Training has been mostly short-term in nature and could be cut since its continuance was not vital for organizational survival (p. 3).

Management personnel have not sensed any urgency in continuing something they do not completely understand. Operating in this context, training has lacked stability in most organizations. An analysis of the literature reveals the following interesting trends that appear to influence ESST programs:

- The growing awareness that funds spent for training and development should be considered more a capital investment than an operational cost
- The creation of ways and means to increase worker productivity and accountability
- The enhancement of increasing productivity gains through training and development

Training as an Investment. One expense of a productive business is that of having well-trained employees. As technology advances, workers must be trained to cope effectively with new skill requirements. This training is properly thought of as investing in future profits. Calhoun (1980) concurs with this notion when he states, "Investment in human resources through . . . improved skills training is a way of providing some protection against productivity losses due to changes in work values, the economy and especially technology" (p. 128). Also, Varney (1981, p. 13) notes, "You can't be what you must be by being what you have been," referring to the responsibility of trainers to be prepared to analyze organizations and to develop the ability to educate and train workers in new functions, new activities, and new ways of performing skills.

A proposed shift of the training function from designation as an operational cost to that of a human capital investment has won wide support (Carnevale 1981a, 1981b; Lippitt 1982; Margolis 1977; Schiff 1980). The reason often given for employee training is to maintain organizational competitiveness ("American Productivity" 1982). Management is beginning to view training as a long-term investment. Lusterman (1977), in a survey of over six hundred firms having five hundred or more employees, found that "there is no doubt in the minds of corporate executives that these [training programs] are necessary and legitimate functions for industry to perform" (p. ix). Human resources are beginning to be treated the same as capital resources because the future depends on providing quality production that is ahead of the competition (Lippitt 1982).

HRD is an outgrowth of business and industry efforts to hire good employees and consistently train and retrain them to prepare for future contingencies. Companies that perceive workers as human capital provide the best in socioeconomic development for workers, the community, and the organization (Schiff 1980).

Increasing productivity. Training is the process of reducing the gap between actual performance and what is needed for the company to be productive (Tickner 1966). How is this accomplished? Some say it is achieved by changing the behavior of workers and others say it comes about through changing the work environment. However it is accomplished, productivity is tied to giving workers whatever additional specific knowledge, skills, or attributes they need to perform up to a given standard (Calhoun 1980; Tickner 1966).

How serious is the productivity problem? Peloquin (1980) suggests that it is "unquestionably the most critical issue we face today in America" (p. 49). Cook (1980) notes that "productivity has been identified as one of the surest ways to cure this country's economic ills . . . including inflation" (p. 4).

The causes of low productivity are numerous. A review of related literature suggests the following reasons for the situation:

- Low productivity can result from poor management. (Calhoun 1980; Herzog 1980; Nadler 1979)

- The most critical elements in productivity are (1) the production worker, (2) marketing, (3) maintenance, and (4) materials handling. (Peloquin 1980)

- A lack of effective and efficient training exists. (Carnevale 1981a, 1981b; Cook 1980; Cullen et al. 1978; "American Productivity" 1982; Schiff 1980)

- A broadly based machine and human capital (training) investment strategy is lacking. This is especially true regarding a human capital investment in women and minorities—where the deficits are the greatest. (Carnevale 1981b)

In a report by Grayson (1981), the following factors were identified as being related to low productivity:

- Possible causes of low productivity are—

  -poor management
  -the "profit now" syndrome
  -lack of commitment to reindustrialization

- Possible causes for the recent drop in the productivity growth rate are—

  -lagging capital investment
  -lagging research and development and technological advancement
  -newly imposed government regulations
  -required environmental investments
  -change in age and sex mixes in the work force
  -increasing shift of investment from agriculture to other sectors
  -negative effect of major low productivity areas (e.g., construction, mining)
  -higher fuel prices
  -worker alienation
  -decreased attention to productivity by management and labor
  -unexpected shocks to the economy (i.e., oil embargo)
  -stop-go economics policies
  -inflation
  -wage-price controls and standards
  -work-rule restrictions

The attitudes of Americans toward employment are thought also to be related to low productivity. Studies revealed the following attitudes:

- Sixty-six percent of individuals in the work force believe that their employers could give them a 10 percent per hour raise without any effect on profit. (Tagliaferri 1977)

- Forty-three percent of employees believe that employers should provide workers with the means to increase their standard of living, but only 24 percent feel they (the employees) should produce more. (ibid.)

- The average American believes that corporate profits on sales are 28 percent, while profits are actually only 4 percent for manufacturing and 2 percent for retail businesses. (ibid.)

- Eighty percent of the work force believe that the employer, consumer, and stockholder benefit from increased productivity at the expense of workers. (Yankelovich 1982)
- Seventy-eight percent of all working Americans believe that people take less pride in their work than they did ten years ago. (ibid.)
- Sixty percent of the work force believe that most people do not work as hard as they did ten years ago. (Keen 1981)
- American workers at all levels are more dissatisfied in their jobs than at any time during the last twenty-eight years. (ibid.)
- Middle level managers are more unhappy and feel less secure in their jobs than ever before. (ibid.)
- Clerical workers, blue-collar employees, and managers, in particular, are becoming increasingly critical of top management. (ibid.)
- Sixty-nine percent of new workers believe that hard work no longer pays off. (ibid.)
- Eighty-three percent of new workers believe corporate profits to be 50 percent of sales. (ibid.)
- Sixty-one percent of high school and college students do not believe in profits. (ibid.)
- Sixty-two percent of high school and college students believe that it is immoral to ask workers to work up to their capacity. (ibid.)
- Sixty-four percent of new workers have negative attitudes about being supervised. (ibid.)
- Fifty-five percent of new workers believe that the government should control industries. (ibid.)

The question is, how do we increase the productivity of the work force? Lancaster and Berne (1981) indicate that the answer lies in training and development, and the demand for training by workers is indeed increasing. The recent economic recession has raised concerns about job security, and workers realize that their job security depends on keeping up to date.

Political Factors

Political forces affect every segment of society. In modern industrial societies, the political trend is toward greater equality (Lenski 1970). The human rights movement of the past two decades left a legacy of legislation enacted in response to the interest of various groups as they sought greater equality for their members. Through rules and regulations established by agencies created by this legislation, the organization and operation of business and industry have been profoundly affected (Wood 1976). Regulations related to the maintenance of a healthful environment, health and safety in the work place, and civil rights (with resulting affirmative action requirements) have been implemented by the federal government (Cook 1980), along with regulations affecting wages, pensions, and insurance (O'Callaghan 1981).

The comments of ten personnel executives related to the reasons for the rapid expansion of their roles all include references to federal legislation and regulations (Mondy and Noe 1981). It is clear that the legislation that grew out of the human rights era has been a prime mover in the development of today's ESST programs and continues to influence training activities significantly. According to Mondy and Noe, this legislation is as follows:

- **Equal Pay Act of 1963—Amended 1972.** The Equal Pay Act (an amendment to the Fair Labor Standards Act of 1938) made it illegal to discriminate in pay on the basis of sex where the jobs require equal skills, effort, and responsibility and are performed under similar working conditions. The Act is applicable only to employers who are engaged in commerce or in the production of goods for commerce. As a result of the 1972 Education Amendments, the Act was expanded to cover other employees in executive, administrative, professional, and outside sales force categories as well as employees in most state and local governments, hospitals, and schools. (1981, p. 35)

- **Title VII of the Civil Rights Act of 1964—Amended 1972.** Title VII of the Civil Rights Act of 1964 as amended by the Equal Employment Opportunity Act of 1972 . . . prohibits discrimination in employment based on race, color, sex, religion, or national origin. The Civil Rights Act covers all employers with fifteen or more employees, unions with fifteen or more members, joint-apprenticeship training programs, employment agencies, institutions of higher education, and federal, state, and local governments. (ibid., pp. 35, 39)

- **Age Discrimination in Employment Act of 1967—Amended 1978.** The Age Discrimination Act prohibits employers from discriminating against individuals between the ages of forty and seventy. The Act pertains to employers with twenty or more employees, unions of twenty-five or more members, employment agencies, and federal, state, and local government subunits. (ibid., p. 39)

- **The Occupational Safety and Health Act of 1970.** Under the Occupational Safety and Health Act of 1970, the Occupational Safety and Health Administration (an agency of the Department of Labor) was established to set up regulations and standards covering safety and health. (ibid., p. 40)

- **Vocational Rehabilitation Act of 1973.** The Vocational Rehabilitation Act prohibited discrimination against physically and mentally handicapped workers who are employed by organizations with government contracts of $2,500 or more. The Act has been broadly interpreted to include alcoholics and drug addicts as handicapped workers. (ibid., p. 40)

- **Employee Retirement Income Security Act of 1974.** The stated purpose of the Employee Retirement Income Security Act is . . . to protect . . . the interests of participants in employee benefit plans and their beneficiaries . . . by establishing standards of conduct, responsibility and obligations for fiduciaries of employee benefit plans, and by providing for appropriate remedies, sanctions, and ready access to the federal courts. (ibid., p. 41)

- **Federal Privacy Act of 1974.** The Federal Privacy Act of 1974 is designed to protect the privacy of individuals by restricting access to files containing personal information. (ibid., p. 41)

- **Pregnancy Discrimination Act of 1978.** The Pregnancy Discrimination Act was an amendment to the 1964 Civil Rights Act. The Act prohibits discrimination in employment based on pregnancy, childbirth, or complications arising from either. (ibid., p. 41)

- **Job Training Partnership Act of 1982 (P.L. 97-300).*** The Job Training Partnership Act (JTPA) replaced the Comprehensive Employment and Training Act with a new program and delivery system for training economically disadvantaged persons for permanent private sector employment. It authorizes and specifies requirements for adult and youth training programs to be administered by the states and carried out via local-level partnerships between the private sector and government. This act further involves employers in the planning and delivery of training to disadvantaged persons, thus expanding ESST programs.

In addition to these Acts of Congress, a number of Executive Orders affect ESST programming. Also, "There are numerous state and local laws which affect human resources management" (ibid., p. 42).

Today's ESST programs are, to a great extent, the result of yesterday's social forces, expressed politically, and eventuating in government regulations designed to create the state of affairs desired by the electorate. As political power is vested in different groups, resulting from a new political mood among Americans, legislation and enforcement procedures will continue to change, once more affecting the design of ESST programs and the role of training professionals.

Technological Factors

Advancing technology has had an incredible impact on the social, economic, and political fabric of society. This impact is expected to continue to increase. A *U.S. News and World Report* Special Report ("The Coming Industrial" 1981) predicts that 45 million jobs will be affected by changing technology during the next twenty years. DuVall (1981) proposes the following relationships between technology and society:

- Technological advance is the most significant single factor affecting global trends—in population, culture, social structure, and material products—which define the basic outline of human history.

- Many levels of societies have existed and still exist today. These range from very simple to highly complex. Historically, the complexity of a society depends largely on the extent of technological knowledge available to the society—more technology has meant more sophistication.

- Technological innovations most significantly affect social development collectively—not with respect to the total set of developments. (p. 9)

What effect is the technology revolution having upon present ESST programs? One major effect is related to the fact that as technology rapidly advances, it is accompanied by an information explosion. Change begets change, and new inventions, especially in electronics, have triggered even more rapid change.** The hand-held calculator, for example, has become smaller and less expensive as solid-state technology has advanced. The first major computer was enormous in size and had a very small capacity. Today, a comparable computer is very small in size and has an enormous capacity. Through advancing solid-state electronics a new industry known as the "information technology industry" has been born. Business and industry have

*Job Training Partnership Act of 1982, 47 Fed. Reg. 52,197 (1982) (to be codified at 20 C.F.R. pt. 626).

**Personal interview of Malcolm A. Knowles by Dr. Robert Wenig, November 1981.

applied mini-and microcomputers to a wide variety of tasks, including training, payrolls, mailing lists, word processing, computation, information storage, and graphic design.

The impact of advancing technology on training is far-reaching. The knowledge of new computer engineers remains current for only six months.** Computer engineers can only remain competent by spending half their time in study and the other half on product development. The demand for technical training of workers to build and service high-technology equipment is extremely great ("American Productivity" 1982).

In the interest of remaining competitive, American firms are increasingly using intelligent machines (robots) and intelligent terminals (computers). A special report, "The Coming Industrial Miracle" (1981) notes that "to win in the world market, managers of U.S. firms are realizing that it will take more than just a happier work force. The economy demands that machines do a bigger share of the tasks now performed by human hands" (p. 55). With the increasing use of intelligent (i.e., machine-controlled) machines, decreasing numbers of employees will be needed to operate production and manufacturing equipment. Unskilled workers will be replaced by skilled technicians who are able to operate, maintain, and in some cases, program the computers to operate the robots. To meet this challenge, trainers will continually have to revise training programs to keep skilled workers current with technology and to help their companies remain competitive.

Socio-technical Factors

It is readily apparent that the forces that affect ESST are not discrete, and they are discussed here in isolation merely for clarity. The move from the industrial age to the dawning information age is being accompanied by a move from a manufacturing to a service economy—changes that may be attributed to socio-technical factors. As industrialization has advanced, new technology has caused workers and their families to concentrate around factories where large numbers of jobs are available. America has moved from an agrarian to an urban society. Whereas 90 percent or more of the people in agrarian societies live in rural areas and 10 percent or less in urban, in our current society 90 percent or more live in urban centers and no more than 10 percent in rural areas (Lenski 1970). Along with our move from a rural to an urban society has come increasing demands for services that farm families provided for themselves, or that extended family groups or communities provided.

As the adoption of high technology increases, the processing of raw materials and the production of goods increase less rapidly and eventually decline, while the service industries continue their rapid growth (Lenski and Lenski 1970). *U.S. News and World Report* ("The Coming Industrial" 1981) predicts that before the decade is over, more than half the nation's economic activity will center around the provision of services rather than the production of goods. Service industries already employ 63.7 million workers, compared to 30.1 million workers employed in goods production and agriculture.

As the labor force changes from a larger number of workers in manufacturing to a larger number in service industries, there is an accompanying effect on the development of ESST programs. Workers in service occupations require a different set of skills than those needed by workers in manufacturing. Individuals in service industries must be able to communicate effectively, whereas the typical manufacturing job requires little interaction with people.

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* Ibid.

Not only is the information age—with its service-industry focus—a product of socio-technical forces, the service industries themselves are socio-technical systems in microcosm. Workers in the socio-technical organization are no longer seen as mere laborers, but as competent, creative human resources who have the potential to increase economic productivity (Herbst 1974). If workers are to realize this potential, they must be trained both to perform their assignments and to achieve personal growth. Training for socio-technical systems is described by Wirth (1982):

> Organizations made up of sociotechnical systems usually require more training for those coming into the organization at all levels than other kinds of organizations. . . . In addition to social systems training, workers are given training in the technical system as a whole . . . crosstraining or cross-skill training is provided at appropriate stages to permit groups or teams to develop rapid responses based on the wide individual response repertoires they will need to meet the demands imposed on them. (p. 680)

Socio-technical organizations in Japan have received plaudits for their effective management techniques. Viewing the organization as a socio-technical system, Japanese managers are very concerned about how individuals function effectively in the organization. Balloun (1982) notes the following reasons why Japanese management is successfully operating human organizations:

- People are treated as members of the organization, not just as employees.
- Shared values, not detailed procedures and controls, are used to guide operations.
- Managers are good listeners—listen to every employee regardless of position in the organization.

The Japanese also have used a management technique called "quality circles," a group process scheme that is rapidly being adapted for use in organizations in America (Cook 1980; Rendall 1981). Those businesses and industries that are competitive think of training as an investment rather than an operational cost. More importantly, perhaps, these companies employ the best in human and technical incentives to achieve success.

TYPICAL EMPLOYER-SPONSORED SKILL TRAINING PROGRAMS

There are numerous types and variations of ESST programs. This is partially explained by the different purposes for which training programs are designed.

Purposes of ESST

As previously noted, Lusterman (1977) surveyed over six hundred industrial concerns with at least five hundred employees, and found that training is designed to achieve the following objectives:

1. Accommodate turnover and increases in the size of the work force
2. Update employees on technological advances
3. Improve the skills and performance of employees in their present jobs

A somewhat different point of view is expressed by Evans and Herr (1978), who indicate that most training programs are designed to achieve one or more of the following objectives:

1. To increase productivity
2. To increase employee promotability
3. To improve the stability of employment
4. To increase safety

Wexley and Latham (1981) suggest that the general purpose of training and development involves knowledge and skill acquisition, whereas the specific goals or objectives of any training and development effort can have *one or more* of the following goals:

1. To improve an individual's level of self-awareness
2. To increase an individual's skill in one or more areas of expertise and/or
3. To increase an individual's motivation to perform his or her job well (p. 4)

Training, according to Johnson (1976), can solve a variety of problems that differ in nature but require individuals to add to their apperceptive backgrounds specific, identifiable items of additional knowledge, skill, or understanding. These problems include the need to do the following:

- Increase productivity

- Improve the quality of work and raise morale
- Develop new skills, knowledge, understanding, and attitudes
- Use correctly new tools, machines, processes, methods, or modifications thereof
- Reduce waste, accidents, turnover, lateness, absenteeism, and other overhead costs
- Implement new or changed policies or regulations
- Fight obsolescence in skills, technologies, methods, products, markets, capital management, etc.
- Bring incumbents to that level of performance which meets (100 percent of the time) the standard of performance for the job
- Develop replacements, prepare people for advancement, improve manpower deployment, and ensure continuity of leadership
- Ensure the survival and growth of the enterprise (Johnson 1976, p. 2.2)

Given different purposes, companies develop differing programs. In addition, various other factors enter into the decision-making process, such as the type of location, the type of business or industry, size of the organization, nature of the work force, extent of unionization, nature and relative centralization or decentralization of facilities, and the size of the training budget.

Programs are developed, ideally, after the organization determines the need for training. A comprehensive approach to determining an organization's training needs "consists of three kinds of analyses: organization, task, and person. . . . These analyses provide answers to the following three questions: *Where* is training needed in the organization? *What* must a trainee learn in order to perform the job effectively? *Who* needs training and of what kind?" (Wexley and Latham 1981, p. 28). Wexley and Latham describe these three kinds of analyses as follows:

- **Organization analysis.** Organization analysis is concerned with examining the organization as a whole. This involves examining its interface with the external environment in which it operates, the attainment of its stated objectives, its human resources, and its climate. The primary purpose of an organization analysis is to determine where in the organization training activities should be conducted (i.e., "Are they needed?") and could be conducted (i.e., "Will they be successful?"). (p. 29)
- **Task analysis.** The first step in task analysis involves describing in rather general terms what the worker does when performing his or her job. [Task identification, the second step] is the most crucial since it entails identifying the specific tasks of which the job is composed. Finally, [in step three] course objectives for the training program are derived from the job information gathered in these two steps. (p. 34)
- **Person analysis.** Person analysis focuses on the individual employee. It deals with the question, "Who needs training and what kind?". . . Step one of person analysis is concerned with how a specific employee is performing his or her job [performance appraisal]. If the performance appraisal indicates that an employee's work performance is acceptable, there is no need for step two [diagnosis]. (p. 46)

Whereas not all organizations have the resources to complete thorough organization, task, and person analyses as they attempt to develop or revise training programs, some effort to gather this sort of information should be made. This can result in more informed decision making as training professionals choose from among those techniques available for developing appropriate and effective programming. There are, of course, a variety of techniques from which to choose for transferring information and transmitting skills in ESST programs.

Types of Training

Evans and Herr (1978) identify several types of training commonly used by employers. These are as follows:

- Orientation training
- Safety training
- On-the-job training (OJT)
- Skill training
- Formalized skill training
- Teaching speed and accuracy in job performance
- Management training
- General education

Wexley and Latham (1981) review the major training techniques currently used by employers, organizing those applicable to ESST into on-site and off-site methods.

On-Site Training Methods

The primary advantages of using on-site training approaches are that difficulties with transfer of learning and training costs are minimized. According to Wexley and Latham (1981), on-site methods of training include the following:

- **Orientation training.** The orientation process has as its goal the development of new employee skills. It attempts to accomplish this objective by transmitting factual information about the company and the employee's new job. (p. 103)
- **On-the-job training (OJT).** The most widely used training and development method [OJT] involves assigning new employees to experienced workers or supervisors . . . . The trainee is expected to learn the job by observing the experienced employee and by working with the actual materials, personnel, and/or machinery that will comprise the job once formal training is completed. (p. 107)
- **Apprenticeship training.** Organizations that employ skilled tradespeople such as carpenters, plumbers, pipefitters, electricians, cement masons, bricklayers, painters, roofers, sheetmetal workers, and printers develop 'journeymen' by instituting approved

apprenticeship programs. . . . They combine on-the-job instruction together with a minimum of 144 hours per year of classroom and shop instruction (a mixture of on-site and off-site training). (p. 112)

- **Coaching.** A different approach to on-site training is coaching, i.e., periodic reviews of performance . . . specific improvement goals should be mutually set by the supervisor and the employee . . . subsequent performance improves most when specific goals are established. . . . (p. 115)

- **Job rotation.** Job rotation involves giving trainees a series of job assignments in various parts of the organization for a specific period of time . . . [job rotation] should be supplemented with supportive coaching from an immediate supervisor in each job assignment. (p. 117)

Off-Site Training

Off-site training permits the acquisition of skills and knowledge away from everyday pressures. It also allows the use of professional trainers. A problem associated with such programming is that of transfer of learning from the classroom to the job, which may be difficult for some trainees. Wexley and Latham (1981) give the following examples of off-site methods:

- **Lecture.** If the primary goal is to convey information, the lecture approach is an effective and economical method for training large groups . . . [it] is quite useful for orienting new employees, giving realistic job previews, summarizing material developed by another training technique, and reducing trainee anxiety about upcoming training programs and job changes. (pp. 130-3l)

- **Audiovisual techniques.** These methods allow an instructor's message to be given in a uniform manner to several organizational locations at one time and to be reused as often as needed. (p. 131)

- **Programmed instruction.** Programmed learning is a self-instructional method consisting of the following features: objectives; own pace; logical sequence; and active responding. It is currently used . . . for a variety of training purposes such as sales training, machine operator training, and safety training. (p. 135)

- **Computer-assisted instruction (CAI).** [In CAI] the trainee interacts directly with a computer by means of electronic typewriters, pens that draw lines on TV screens, and devices that present auditory material . . . . The computer is capable of continuously assessing the trainee's progress and adapting the method and/or material presented to fit the trainee's particular needs. . . . (p. 137)

- **Equipment simulators.** For jobs in which it is either too costly, inefficient, or dangerous to train workers on the equipment used to perform the job . . . facsimilies or simulators are used. They have generally been designed to represent tasks within the following categories: procedures; motor skills; identifications; and team functions. (p. 140)

Under "Media and Methods" (for training), the *Training and Development Handbook* (Craig 1976) lists job instruction, classroom instruction, group methods (conferences, meetings, workshops, and seminars), case method, role playing, human relations laboratory training, correspondence study, programmed instruction, gaming simulation, computer-assisted and

computer-managed instruction, learner-controlled instruction, and audiovisuals. A brief discussion of two types of the above training strategies not described by Wexley and Latham (1981) follows.

- **Role playing.** By far the two most common uses for role playing in training programs "are for (1) training supervisors in human relations skills, and (2) training sales personnel in sales techniques. . . . [It] offers an opportunity for practicing skills in 'doing' and implementation" (Wohlking 1976, p. 36.1).

- **Case method.** One objective of the case method is to cultivate the skill of practical judgment. "Getting down to cases develops situational insight, building on one's own tested experience and that of others. In talking with others about experience as a case, one can learn to benefit from two essential features of case method: *the case discussed* and *group discussion*" (Pigors 1976, p. 35.1).

Mondy and Noe (1981) list—under a discussion of training and development methods—coaching, business games, case studies, conference/discussion, in-basket training, internships, role playing, job rotation, programmed instruction, computer-assisted instruction, classroom lecture, apprenticeship training, simulators, and vestibule training. Of these techniques, coaching, internships, job rotation, and apprenticeship training are conducted on the job. Coaching, job rotation, programmed instruction, computer-assisted instruction, classroom lecture, apprenticeship training, simulators, and vestibule training are designated as appropriate for operative employees (as opposed to management personnel). One method, vestibule training, is listed by Mondy and Noe (1981) but has not been fully described previously. A brief discussion of this type of training follows.

- **Vestibule training.** Vestibule training involves the utilization of equipment that closely resembles the actual equipment used on the job. The training takes place away from the production area. "A primary advantage of vestibule training is that it removes the employee from the pressure of having to produce while learning. The emphasis is on learning skills required by the job" (Mondy and Noe 1981, p. 238).

Wexley and Latham (1981) suggest that "there is more potential in on-site training approaches than anywhere else in the training and development area" (p. 125). They emphasize the idea that decisions about the use of on-site and off-site methods must be based on the goals to be achieved and the types of employees to be trained, further noting that "off-site methods seem most applicable for job skills and motivational training" (p. 142).

Today's Typical ESST Program

In order to identify and describe today's typical ESST program, a survey of directors of skill or technical training programs was conducted during 1981.* Sixty questionnaires were distributed and thirty-six (60 percent) were returned.

According to the results of the survey, companies satisfy an average of 80 percent of their needs for skilled workers through training, as opposed to recruiting skilled workers from outside of the organization. Reasons noted for providing training include fulfulling the following needs:

- To help employees remain current with new technology

*Survey of business and industrial training directors conducted by Dr. Robert Wenig, 1981.

- To increase productivity
- To make the work place safer
- To increase employee promotability
- To reduce turnover (improve stability)

Training needs are determined primarily by activities carried out by training departments through needs analyses of the organization, jobs, and individuals (supervisors and workers) along with those related to production.

Most skill training is completed during working hours. Incentives are provided to motivate workers to update skills. OJT is the primary method used for delivering training. The types of training commonly offered relate to (1) all of the industrial trades, (2) shop math and physics, (3) blueprint reading, (4) the use of computers, (5) electronics, (6) maintenance, (7) repairs, and (8) the building trades.

The most often identified needs of trainees include improving the transfer of learning from training to the job, achieving an acceptable level of skills, and acquiring adequate skills in oral and written communications. Content for skill and supportive areas is identified primarily through task analyses and with the assistance of advisory committees.

Ninety percent of skill training in today's typical ESST program is designed to achieve short-term goals. However, emphasis on long-term goals such as improving the stability of the work force and keeping current with advancing technology, is gradually increasing.

The training directors surveyed view both effective trainers and effective ESST programs as having certain characteristics. An effective trainer is seen as being highly motivated, a good communicator, technically competent, and skilled in adult education methodologies. The training directors cited common elements of effective ESST programs as—

1. strong support from both management and unions;
2. attractive incentives for participation in training programs for workers;
3. comprehensive needs assessments and analyses;
4. competency-based programming.

Description of the Exemplary ESST Program

The identification of the specific characteristics exemplifying ESST programs requires defined criteria. Whereas many experts on training agree that there is no one best training method, they also agree that all effective skill trainers possess several basic characteristics.

The same notion applies to ESST programs. The most effective ones would certainly possess the common elements found in effective ESST programs, as well as specific items selected for a particular situation.

When survey respondents were asked, "What are the elements of an exemplary ESST program that considers technology/skills and human relations training?" the results were as follows:

- ESST programs should be totally oriented to trainee needs on the job so that performance standards can be reached.
- Content skills should be based on an appropriate needs analysis.
- A comprehensive career development program that will enable trainer and trainee to function cooperatively in reaching goals of each individual and of the organization should be included.
- Training should be oriented to the company's human resources requirements.
- Well-qualified trainers should be employed.
- Training materials should be geared to learners.
- An appropriate facility should be made available for use in training activities. (Dedicated facilities are recommended.)
- A complement of incentives to motivate trainees should be included.
- Team work and trainee participation should be stressed.
- Trainees should be made to feel valued regardless of their jobs.

What are the characteristics of an exemplary ESST program? In an attempt to answer this question, one of the authors interviewed Malcolm Knowles, who has written extensively on adult learning and has many years of consulting experience in business and industry. Knowles identified the following six elements of an exemplary ESST program:*

1. Top management who value personnel development
2. Trainers who are highly qualified and well-rewarded professionals in all aspects of their job
3. An incentive plan for employee self-improvement
4. An environment in which managers and supervisors are increasingly responsible for personnel development
5. Well-equipped training facilities
6. An adequate instructional resource center

These notions raise the issue of what constitutes a commendable ESST program. Since well-qualified trainers are seen as a major factor in such programs, what means will ensure trainer competency? One suggestion is trainer certification, which turns on whether a core set of

*Personal interview of Malcolm A. Knowles by Dr. Robert Wenig, November 1981.

competencies and a body of knowledge underlie the training and development function ("Training Today" 1982). Many trainers believe that the certification issue is not an overwhelmingly important one because employability as a trainer is usually related to experience in the company. Other trainers believe that trainer certification is required for quality training and development. The certification issue therefore remains unresolved.

FUTURE CONSIDERATIONS

Recalling that the objective of ESST is to help to achieve organizational goals through the optimal use of human resources, it is disconcerting to learn that "between 1963 and 1975, the United States dropped from second to seventh place among industrial nations in the 'measured skills endowments' of its labor force" ("America's Human" n.d., p. 2). This has led to today's shortages of skilled workers—sixty thousand skilled machinists and toolmakers, with an estimated shortage of two hundred and fifty thousand by 1985 (ibid.). In addition, "The data processing field today in all industry is considered to be 50% understaffed. . . . By 1990, only eight years away, the projected increase (in staffing requirements) is 140% to 180% . . ." ("$100,000 Data" 1982, p. 1).

A concurrent crisis of confidence in America's public schools apparently exists, as "the quality of the nation's schools is being seriously questioned" ("America's Human" n.d., p. 2). Expert opinion holds that "insufficient employer-sponsored job-related training is likely to have had profound ramifications on wage and productivity growth . . . leading to Labor Market Imbalance (the fit of people to jobs both qualitatively and quantitatively) which . . . has gotten worse since 1970" ("Training Lack" 1982, p. 1). It is suggested that this situation is due to two primary factors:

> The two main reasons for this decline, on the demand side: increasing technological advances have changed the nature of jobs with geographic dispersion (locus of employment) exacerbating the problem. On the supply side . . . the public education system has gone in the wrong direction and . . . employer-provided job training has been minimal. (ibid.)

Whereas "the nation's basic commitment to its human resources is to offer every citizen the opportunity to obtain the skills and knowledge necessary for productive work . . . declining test scores, increasing numbers of functionally illiterate adults, shortages in certain critical skills areas and significant numbers of chronically unemployed youths suggest the nation is not adequately meeting the training and development needs of its citizens" ("America's Human" n.d., pp. 1-2). Shortages of skilled workers in the high-technology areas that will continue to grow exponentially in the coming decades, and the uncertain quality of education and training, are not reassuring. "It seems clear that unless this country develops new approaches to the utilization of its human resources, America will continue to experience declining productivity growth and a falling standard of living" (ibid.)

The development of human resources, from either a microeconomic or a short-term view, certainly can contribute to the achievement of the goals of any organization. From either a macroeconomic or long-term perspective, however, goals are somewhat more global. Peterson and associates (1982) describe these broader concerns:

> In industrialized nations, perhaps the predominant general goal—certainly the goal of manpower training policies—has been development of human resources on behalf of economic expansion. . . . Such "investment in human capital" concepts underpinned, for

example . . . the U.S.'s Comprehensive Employment and Training Act (CETA), although as it has evolved, most of the "investment" is in the marginally employable—probably a reasonable objective in a time of not unlimited revenues. . . . Most industrialized countries [however] quite explicitly (by law) use their national manpower training systems to meet national economic or labor market needs (shortages). . . . This is accepted public policy throughout the industrialized world. In this country, CETA has rarely functioned as a labor market stabilizer. (p. 392)

National manpower training programs can and do have goals other than to operate as a counter-cyclical (anti-recession) instrument and to respond to labor market shortages . . . [for example] to facilitate (1) upward mobility (job advancement) and (2) continuous adjustment to technological change . . . [and also to provide] opportunities for adults to shift careers in midlife [and] educational equity. . . . [Educational equity] is the general goal of the U.S. government's principal adult education initiative, the Adult Basic Education Program. (p. 392)

There is, in the United States, an increasing recognition of the serious gaps between the education and work sectors. The lack of a comprehensive national human resources policy has resulted in training programs that are virtually parallel and operating in isolation from each other, as has been documented as follows ("America's Human" n.d.):

Since passage of the 1961 Area Redevelopment Act, designed to reduce structural unemployment among coal miners in Appalachia, federal spending on employment and training programs has grown dramatically—approaching $15 billion in 1981. These programs have been carried forward largely outside and in addition to, existing vocational education programs in the schools and community colleges, and private-sector training. In the last decade, for example, over 99 per cent [sic] of public investment in youth employment has been made outside the schools. (p. 2)

The need exists in the United States for a structure to encourage improved linkages among federal employment and training programs, public and private vocational education programs, and private-sector training. The best of all possible worlds in technical skills training involves the establishment of a better linkage between private and public sectors for the purpose of producing more qualified workers.

Stewart (1980) specifies existing tendencies that provide a starting point for consideration of policy directions for the future:

There is the priority given in CETA to employability for the disadvantaged, with some secondary attention to skills training and job placement of more experienced unemployed workers. The focus is largely on jobs in the secondary labor market or on entry-level jobs in firms in the primary labor market. Training of employed adults, for skills enhancement and job promotion, is outside the scope of this major American labor market training program.

There is a continuing development of corporate education and training for the privileged workers in the internal labor markets of the larger enterprises, and no counter-vailing [sic] public program for decasualization of worklife [sic] in the small firms of the secondary labor market other than the potential effects of CETA job-preparedness efforts.

Cutting across these public and private training systems, there is a burgeoning structure of education/training opportunities for adult workers. At the option of the individual, these voluminous opportunities may serve both labor market and broader social interests. These

> may entail some financial costs and use of leisure time. Except in large corporations, there are no programs of paid educational leave or training for adult workers without cost and during regular working hours. (p. 60)

A comprehensive national training policy probably has not developed in this country as in other nations because little need has been felt for such a scheme. The plethora of schools and colleges in the United States has encouraged business and industry to rely on this system for training workers. "In America, there is a tradition for employers to rely for their trained manpower on the ubiquitous public educational institutions, which—the community colleges, for example—are increasingly used for the retraining of workers" (Peterson et al. 1982, p. 399). In addition, labor unions in the United States have not demanded the creation of training opportunities or adult education programs. As Peterson and associates (ibid., 1982) note, "In America, the unions have tended to limit their concerns to 'bread and butter' matters (often in adversarial ways). In general—there are notable exceptions—they have been relatively uninterested in education and training for their members, even in encouraging them to participate in such (paid) programs as are available to them" (pp. 398-99).

A third crucial reason for the lack of an effective national training system is also suggested by Peterson and associates (1982):

> Virtually all the national training systems reviewed rely on levies or contributions from the employing firms—for the obvious reason that they are important beneficiaries of the training. American business and industry is apparently reluctant to accept this model, preferring to rely on the schools and colleges, their own training programs, and a favorable market for potential employees. Similarly, U.S. employers are reluctant to give their employees time off for education and training. (p. 399)

Pertinent questions related to the problem of how a comprehensive and coordinated national education/training system strategy might be implemented are posed by Stewart (1980, pp. 61-62).

- Is the overall patchwork of our education/training system for worklife [sic] adequate to meet the needs of the American worker and economy?
- Are recent technological developments again raising questions which generally were thought put to rest at the time of the alarm over automation in the late Fifties and early Sixties?
- Is our only national labor-market training program, CETA, adequate in scale, emphasis, and objectives? And, related, how good is in-firm training in the small and medium size firms that CETA most readily could be expanded to serve with some expectation of effectiveness? How good—or wasteful—is the tax-deductible training of the large enterprises? Are the financial resources allocated by Congress to the vocational education system economically utilized or could these resources be better used in a differently oriented and expanded CETA-type system?
- Should the balance between expenditures at all levels of government for schoollife [sic] education/training and for worklife [sic] education be shifted in the direction of the latter? Should there be a greater emphasis on vocational content and preparation for worklife [sic]? And if so, does this imply—for the variety of opportunities increasingly available to adult workers for lifelong learning and further training and retraining—that there should be some form of public financing for those oriented to labor market needs of the individual and the economy, while leaving support of the more culturally-oriented to the resources of private groups and the individual?

- If other parts of the system are unchanged, can a largely voluntaristic approach to lifelong learning and training serve by itself as a principal means for overcoming shortcomings in American education and training?

Thirty-one implications for national education and training policy in the United States were drawn from an intensive, year-long study of adult education and training in nine industrialized countries. The research was completed by Richard Peterson and associates (1982) for the National Center for Education Statistics. The nine countries studied include Australia, Canada, Denmark, the Federal Republic of Germany, France, the Soviet Union, Sweden, the United Kingdom, and the United States. The research focused on policies and programs directed at five subpopulations: (1) workers, (2) older persons, (3) women entering the workforce, (4) parents, and (5) undereducated adults.

The general recommendations that relate to education and training follow:

1. Broad goals for adult education and training—set forth at all levels of government—should be multiple in nature. They would vary from state to state, and would be expected periodically to change. Government-sponsored adult learning programs should seek to serve the self-determined learning interests of individuals, both vocational and nonvocational, as well as the literacy and manpower needs of the society and economy. Special attention still needs to be given to equity considerations, in view of the persisting economic bias in adult education participation rates. . . . Procedurally, a general goal of adult learning policy at the state and federal levels should be to stimulate effective local-level initiatives. (Peterson et al. 1982, p. 396)

2. If education is to be a domain for federal policy in the U.S., as articulated, for example, by a cabinet-level Department of Education, that policy should strongly affirm the importance of opportunities for continuous learning as in the interests of individuals and the nation. Beyond this philosophic commitment and leadership, the federal government should sponsor program demonstrations, research, and dissemination and clearinghouse work related to adult education and training. (ibid.)

3. State government, with unquestioned responsibilities for education, should likewise promulgate broad policy that recognizes the importance of wide opportunities for education and training throughout the adult years. (ibid.)

4. Arguably a *nationally*-conceived and directed manpower or labor market training program, in addition to or in place of state programs, is needed in the U.S. The realities of regional job market imbalances and worker geographic mobility make a nationally-organized program imperative. National labor market policies exist in almost all industrialized countries, and much can be learned from them in designing a program for this country that is efficient, accessible to all, and effective in meeting both the career aspirations of individuals and the manpower needs of the economy. (ibid., p. 397)

5. Since at the federal level diverse programs are likely to be conducted by different agencies—principally by the Department of Education and the Department of Labor (but also by the Departments of Defense, Agriculture, and Health and Human Services)—it is important that there be an interdepartmental mechanism for coordinating federal adult education and training programs. (ibid.)

6. A similar mechanism is likewise needed at the state level, to coordinate diverse adult learning programs, vocational and nonvocational, administered by and funded through separate state agencies. (ibid.)

7. Actual implementation of adult education and training programs should be decentralized to the greatest extent feasible. . . . Funds for adult education could be distributed through local school district adult education offices to diverse local providers of educational services (including two- and four-year colleges as well as non-school agencies such as museums and community organizations). (ibid.)

8. Local (and/or metropolitan or regional) jurisdictions should establish councils, with members from major area providers, to cooperatively plan, allocate funds for, and coordinate the broad range of education provision in the community to meet the broad range of adult learning needs in the community. (ibid.)

Implications that relate to workers are as follows:

1. Agencies responsible for national and state manpower and employment policies should consider designing a mechanism, national in purpose and scope, but local in implementation, by which government can intervene in the on-going training systems in a locality, to provide additional trained adults for critical occupations in which there are regional employee shortages. Local cooperative councils, discussed . . . above, could help identify skill shortages as well as the institutions to provide the new or expanded training (ibid., p. 401).

2. Federal and state manpower agencies should likewise consider plans for creating programs through which individual adults of any age may on their own volition, or if their jobs are threatened by technological obsolescence, obtain up to a year of full-time training in a new occupation for which there is a known labor market shortage. Training should be free, and trainees could receive a stipend equal to a current minimum wage. (ibid.)

3. Federal and state policy makers [sic] need to consider substantially expanding tax incentives to businesses of all sizes for in-house training of employees. (ibid.)

4. Federal and state agencies responsible for manpower policy should give consideration to plans for a system of paid educational leaves for employees at all levels in the U.S., possibly to be financed jointly from federal, state, employer and employee sources. (ibid., p. 401-02)

5. Schools and colleges should act to create special educational opportunities for workers—to be conducted on campuses, at workplaces, or elsewhere, at times and in formats tailored to identified groups of workers. Planning and coordination could occur through the aforementioned cooperative councils. (ibid., p. 402)

6. While training opportunities for government workers in the U.S. are extensive, and extensively used, adoption of new approaches could conceivably lead to more effective training and eventually to better performance. (ibid.)

This list of implications for education and training policy obviously raises numerous issues. Policymakers and adult education and training professionals in all sectors of society will no doubt wrestle with these issues for a long time to come, as well as with the continually changing needs of workers for training and retraining. Present predictions hold that ESST professionals will face a significant challenge as they attempt to meet the emergent training needs of the 1980s.

> By the end of the present decade, office workers in the industrial world will outnumber farmers and laborers combined. . . . Though our economy is becoming more dependent on the information services sector, investment in American office workers has been lagging . . . too often, management methods remain rooted in preautomation techniques due to a lack of training in the potential uses of the technology at hand. . . . Today, technical training programs . . . exist not only for the technical staff, but also for the non-technical managers, clerks and secretaries. ("$100,000 Data" 1982, p. 1)

The ESST field is clearly a viable and extremely important one—as is the HRD system in which it is contained—for the future of not only America's workers, but for the country itself. Training and development professionals face what is perhaps the ultimate responsibility—creating an environment within which all workers can grow and develop.

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